

REMARKS

Claims 1-49, 51 and 52 are pending in the application. Claim 50 has been cancelled and claims 51-52 have been newly added. Claims 47-49 have been objected to as described in paragraph 5 of the Office Action. Claim 50 has been objected to under 37 C.F.R. 1.75(c) as described in paragraph 5 of the Office Action. Claim 15 was rejected under 35 U.S.C. §112, second paragraph as described in paragraph 6 of the Office Action. Claims 1-2, 5-8, 10-12, 22-24, 26-29, 31, 36, 42 and 39 were rejected under 35 U.S.C. §102(e) as described in paragraphs 7-13 of the Office Action. Claims 6, 9, 17, 25, 30, 32-35, 38, 40-41, 43-46 and 49 were rejected under 35 U.S.C. §103(a) as described on pages 7-13 of the Office Action.

Attached hereto are replacement formal drawings for Figs. 5A, 7 and 18. Specifically, the “PE-RE Modulator” of Item 410 in 5A has been changed to --PE-RZ Modulator-- to correspond with its description in the Specification. The PE-RZ Demodulator of Fig. 7 has been changed from Item “350a” to Item --530a--, to correspond with the description of the Specification. The “Master Disk” of Item 5 in Fig. 18 has been changed to --Master Production Apparatus-- to correspond with its description in the Specification.

The claims have been amended to place the claims in better U.S. form without narrowing the scope of the claims as originally presented.

As discussed above, Fig. 7 has been corrected as discussed in paragraph 3 of the Office Action. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

The “PE-RZ demodulator” on page 40, line 5 of the Specification has been changed to -- PE-RZ decoder--. Accordingly, it is respectfully requested that the objection to the Specification be withdrawn.

In light of the amendments to claims 47-49, it is respectfully requested that the objection to the claims be withdrawn. It is respectfully submitted that the objection of claim 50 is moot as the claim has been cancelled.

The present invention relates to an optical information recording medium such as an optical disk on which information can be recorded, reproduced or erased, a recording and reproducing method and a recording and reproducing apparatus therefore.

In an optical disk of the invention, data in the third section including information inherent to each optical disk is inhibited from being outputted from the recording and reproducing apparatus. Then, illegal reproduction of contents in the optical disk can be prevented by using the information.

When reproduction of stripe-like additional signals 112, 113 is completed, a secret key is detected based on an encrypted media ID. However, the media ID had been recorded with encryption or modulation, so that a user cannot get it while the disk is reproduced.

Thus, the data to be inhibited from being outputted from the recording and reproducing apparatus is reproduced in the apparatus, but it cannot be externally outputted, or it is used only in the apparatus. Therefore, all the contents of the additional information cannot be confirmed by the computer 322 (Fig. 11), and it is impossible to illegally decode or change the additional information inherent to the apparatus such as ID.

Thus, when an optical disk includes signal 112 inhibited from being outputted in a part of the stripe-like additional information, the signal of the ID or secret key cannot be reproduced by a user. If a reproduction command for a protected data file cannot be set within the apparatus by using information signals including the additional information, the mode cannot be entered.

Therefore, the contents in the main recording area can be very well protected. Information inherent to an optical disk is recorded in an area which cannot be outputted by a user. The contents are encrypted with the data that cannot be outputted by a user, so that an illegal user cannot reproduce or change the information inherent to the optical disk.

The reproduction method and the apparatuses of the invention are also based on the above-mentioned technical idea.

Independent claim 1 is drawn to an optical disk having a recording layer comprising a first recording area and a second recording area. More specifically, the second recording area comprises a first section for recording control data on the second recording area, a second section for recording data not to be inhibited from being outputted from a recording and reproducing apparatus for the optical disk and a third section for recording data to be inhibited from being outputted from the recording and reproducing apparatus for the optical disk. Further, claim 1 requires the control data recorded in the first section to include an identifier which shows whether the second recording area includes the third section.

Independent claim 22 is drawn to a method of reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area. The method of claim 22 requires, *inter alia*, processing the data to be inhibited from being outputted only in the recording and reproducing apparatus when the data reproduced from the second recording area are determined to include the data to be inhibited from being outputted, without outputting the data to be inhibited from being outputted.

Claim 27 is drawn to an apparatus for reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area. The apparatus of claim 27 comprises, *inter alia*, an optical head, a first reproducing section and a second reproducing section. More particularly, claim 27 requires that when data to be inhibited from being outputted are recorded in the second recording area, the second reproducing section processes the data only therein.

Independent claim 36 is drawn to an apparatus for reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area. The apparatus of claim 36 comprises, *inter alia*, an optical head, a first reproducing section and a second reproducing section. More particularly, claim 36 requires the second reproducing section to be operable to generate information signals based on data to be inhibited from being outputted recorded in the second recording area, and the first reproducing section to be operable to superpose the information signals to signals reproduced from the first recording area and to output the superposed signals.

Independent claim 39 is drawn to a recording and reproducing apparatus for recording and reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area. The apparatus of claim 39 comprises, *inter alia*, a generator and a recorder. More specifically, the recorder of claim 39 is required to be operable to superpose the generated information signals with predetermined signals and record the superposed signals to the first recording area or add them to the second recording area.

Claim 43 is drawn to a recording apparatus for recording contents to an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area. The apparatus of claim 43 comprises, *inter alia*, a cipher device and a recording

section. More specifically, the recording section of claim 43 is required to be operable to record the contents ciphered by the cipher device in the first recording area in the optical disk.

Claim 46 is drawn to a reproducing apparatus for reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording ciphered contents data and data for recording and reproducing the ciphered contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area, the secondary data including a disk identification inherent to each optical disk. The apparatus of claim 46 comprises, *inter alia*, an optical head, a first reproducing section and a second reproducing section. More specifically, claim 46 requires the first reproducing section to be operable to decode the ciphered contents data by using the disk identification reproduced by the second reproducing section.

Claim 49 is drawn to a reproducing apparatus for reproducing contents from an optical disk having at least a recording layer for recording information, the recording layer disk comprising a first recording area for recording contents data and data for recording and reproducing the contents data, and a second recording area for recording secondary data on the contents recorded in the first recording area, the secondary data including a disk identification inherent to each optical disk. The apparatus of claim 49 comprises, *inter alia*, an optical head, a first reproducing section and a second reproducing section. More specifically, claim 49 requires the second reproducing section to be operable to reproduce data with the optical head from the second recording area.

It is respectfully submitted that the applied prior art fails to teach the above-identified limitations.

The Examiner compares the main information recording area 100c (Fig. 7) with the "first recording area for recording contents data and data for recording and reproducing the contents data" and the table-of-contents (TOC) area 100b with the "second recording area for recording secondary data on the contents recorded in the first recording area" with 100b. The Examiner further compares

the "information of permit digital copy" with the second section in the second recording area, the "information to prohibit digital copy" with the third section in the second recording area, and the subcode (col. 1, line 56) with the "control data recorded in the first section including an identifier which shows whether said second recording area includes said third section or not."

Maeda discloses that when information including main information of contents and management information reproduced from a first recording medium is recorded in a second recording medium, the information is erased in the first recording medium, in order to prevent illegal copy of digital contents. That is, when digital contents are copied, the original is erased. Therefore, Maeda does not suggest the present invention.

The prior art shown in Maeda is quite different from the present invention. It is to be noted that Maeda only states "information to prohibit or not permit digital copying," and the information would be taken as a single flag or the like. Further, the "subcode" is used to determine the sector number for reproduction of a desired track, and it does not include an "identifier which shows whether said second recording area includes said third section or not." In other words, no identifier is included in the TOC area 100b to distinguish between the "information not to prohibit digital copy" and "information to prohibit digital copy." Further, Maeda does not disclose that a part of additional data is inhibited to be outputted from the recording and reproducing apparatus. The TOC area 100b does not have the first and third sections of the second recording area. As explained above, the management information (TOC information) in Maeda can be reproduced, or it cannot be compared with the additional information of the invention that cannot be rewritten with a user's computer. The management information in Maeda is only related to an address and the like in the recording medium. Still further, Maeda does not disclose an ID, a secret key or the like.

Scrambling of main data by superposing information related to the additional information to the main information is also not described.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the foregoing, it is clear that Maeda does not anticipate claims 1, 22, 27, 36, 39, 43, 46 and 49.

As claims 2-21, 23-26, 28-35, 37, 38, 40-42, 44, 45, 47, 48, 51 and 52 are dependent upon one of 1, 22, 27, 36, 39, 43, 46 and 49, and therefore include all the limitations thereof, it is additionally respectfully submitted that Maeda fails to anticipate claims 2-21, 23-26, 28-35, 37, 38, 40-42, 44, 45, 47, 48, 51 and 52 within the meaning of 35 U.S.C. § 102.

It is respectfully submitted that Sako fails to teach the shortcoming of Maeda such that a combination of the teachings of Maeda and Sako would teach that which is required in independent claims 1, 22, 27, 36, 39, 43, 46 and 49.

As described in paragraphs 19-24, Sako is relied upon for allegedly teaching: “ciphered data are recorded in said third section in said second recording data;” “data recording said first recording area in the recording layer by generating uneven pits in a reflection film, and data are recorded by removing the reflection film partially as stripe marks longer in the radial direction;” “after determined the data is not inhibited, the data is deciphered and decoded;” “using a ciphered decoder to cipher data in first and second recording layer;” or “a cipher device which ciphers the contents based on data including information inherent to a disk, the information having been recorded in the second recording area (see Fig. 1 and 3); a recording section which records the contents ciphered by said cipher device in the first recording area in the optical disk (see Fig. 3, items 4).”

While not commenting on accuracy of the asserted teachings of Sako discussed above, it is respectfully submitted that Sako nevertheless fails to teach that the control data recorded in the first section includes an identifier which shows whether said second recording area includes said third section, as required in Independent claim 1; processing the data to be inhibited from being outputted only in a recording and reproducing apparatus when the data reproduced from the second recording

area are determined to include the data to be inhibited from being outputted, without outputting the data to be inhibited from being outputted, as required in claim 22; when data to be inhibited from being outputted are recorded in the second recording area, the second reproducing section processes the data only therein, as required in independent claim 27; the second reproducing section being operable to generate outputted recorded in the second recording area, and said first reproducing section being operable to superpose the information signals to signals reproduced from the first recording area and to output the superposed signals, as required in independent claim 36; a recorder which superposes the generated information signals with predetermined signals and records the superposed signals to the first recording area or adds them to the second recording area, as required in independent claim 39; a recording section operable to record the contents ciphered by the cipher device in the first recording area in the optical disk, as required in independent claim 43; wherein the first reproducing section is operable to decode the ciphered contents data by using the disk identification reproduced by the second reproducing section, as required in independent claim 46; or a second reproducing section operable to reproduce data with the optical head from the second recording area, as required in independent claim 49.

Because neither Maeda nor Sako teach: that the control data recorded in the first section includes an identifier which shows whether said second recording area includes said third section, as required in Independent claim 1; processing the data to be inhibited from being outputted only in a recording and reproducing apparatus when the data reproduced from the second recording area are determined to include the data to be inhibited from being outputted, without outputting the data to be inhibited from being outputted, as required in claim 22; when data to be inhibited from being outputted are recorded in the second recording area, the second reproducing section processes the data only therein, as required in independent claim 27; the second reproducing section being operable to generate outputted recorded in the second recording area, and said first reproducing section being operable to superpose the information signals to signals reproduced from the first recording area and

to output the superposed signals, as required in independent claim 36; a recorder which superposes the generated information signals with predetermined signals and records the superposed signals to the first recording area or adds them to the second recording area, as required in independent claim 39; a recording section operable to record the contents ciphered by the cipher device in the first recording area in the optical disk, as required in independent claim 43; wherein the first reproducing section is operable to decode the ciphered contents data by using the disk identification reproduced by the second reproducing section, as required in independent claim 46; or a second reproducing section operable to reproduce data with the optical head from the second recording area, as required in independent claim 49, it is respectfully submitted that a combination of the teachings of Maeda and Sako fails to teach that which is required in independent claims 1, 22, 27, 36, 39, 43, 46 and 49. Therefore, it is respectfully submitted that claims 1-49, 51 and 52 are patentable over the teachings of Maeda and Sako within the meaning of 35 U.S.C. § 103.

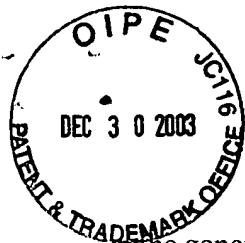
It is respectfully submitted that Taki et al. (Taki) fails to teach the shortcomings of Maeda such that a combination of the teachings of Maeda in view of Taki would teach that which is required in independent claims 1, 22, 27, 36, 39, 43, 46 and 49.

As discussed in paragraphs 27-29 of the Office Action, Taki is relied upon for allegedly teaching “said recording layer comprises a magnetic layer having perpendicular magnetic anisotropy in a film normal direction;” and “said recording layer is changeable reversibly between crystalline and amorphous states according to conditions of a light for illuminating said recording layer.”

While not commenting on the accuracy of the asserted teachings of Taki, it is respectfully submitted that Taki fails to teach: that the control data recorded in the first section includes an identifier which shows whether said second recording area includes said third section, as required in Independent claim 1; processing the data to be inhibited from being outputted only in a recording and reproducing apparatus when the data reproduced from the second recording area are determined to include the data to be inhibited from being outputted, without outputting the data to be inhibited

from being outputted, as required in claim 22; when data to be inhibited from being outputted are recorded in the second recording area, the second reproducing section processes the data only therein, as required in independent claim 27; the second reproducing section being operable to generate outputted recorded in the second recording area, and said first reproducing section being operable to superpose the information signals to signals reproduced from the first recording area and to output the superposed signals, as required in independent claim 36; a recorder which superposes the generated information signals with predetermined signals and records the superposed signals to the first recording area or adds them to the second recording area, as required in independent claim 39; a recording section operable to record the contents ciphered by the cipher device in the first recording area in the optical disk, as required in independent claim 43; wherein the first reproducing section is operable to decode the ciphered contents data by using the disk identification reproduced by the second reproducing section, as required in independent claim 46; or a second reproducing section operable to reproduce data with the optical head from the second recording area, as required in independent claim 49.

Because neither Maeda nor Taki teach: that the control data recorded in the first section includes an identifier which shows whether said second recording area includes said third section, as required in Independent claim 1; processing the data to be inhibited from being outputted only in a recording and reproducing apparatus when the data reproduced from the second recording area are determined to include the data to be inhibited from being outputted, without outputting the data to be inhibited from being outputted, as required in claim 22; when data to be inhibited from being outputted are recorded in the second recording area, the second reproducing section processes the data only therein, as required in independent claim 27; the second reproducing section being operable to generate outputted recorded in the second recording area, and said first reproducing section being operable to superpose the information signals to signals reproduced from the first recording area and to output the superposed signals, as required in independent claim 36; a recorder which superposes



the generated information signals with predetermined signals and records the superposed signals to the first recording area or adds them to the second recording area, as required in independent claim 39; a recording section operable to record the contents ciphered by the cipher device in the first recording area in the optical disk, as required in independent claim 43; wherein the first reproducing section is operable to decode the ciphered contents data by using the disk identification reproduced by the second reproducing section, as required in independent claim 46; or a second reproducing section operable to reproduce data with the optical head from the second recording area, as required in independent claim 49, it is respectfully submitted that a combination teachings of Maeda in view of Taki would additionally fail to teach that which is required in independent claims 1, 22, 27, 36, 39, 43, 46 and 49.

Accordingly, it is respectfully submitted that claims 1-49, 51 and 52 are patentable over the combination of Maeda in view of Taki within the meaning of 35 U.S.C. § 103.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

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